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A review of the pirate spiders of Tasmania (Arachnida, Mimetidae, *Australomimetus*) with description of a new species

Danilo Harms: Systematik und Evolution der Tiere, Fakultät für Biologie, Chemie und Pharmazie, Freie Universität Berlin, Königin-Luise-Straße 1-3, 14195 Berlin, Germany. E-mail: danilo.harms@gmx.de

Mark S. Harvey: Department of Terrestrial Zoology, Western Australian Museum, Locked Bag 49, Weslshpool DC, Western Australia 6986, Australia

Abstract. A new pirate spider (family Mimetidae) is described as *Australomimetus mendax* new species from Tasmania, Australia. In this context, all mimetid species currently known from the island have been reviewed and re-illustrated. Five species are recorded and they all belong to the genus *Australomimetus* Heimer 1986. Re-illustrated here are *Australomimetus maculosus* (Rainbow 1904), *A. tasmaniensis* (Hickman 1929) new combination, *A. aurioculatus* (Hickman 1929) new combination and *A. audax* (Hickman 1929) new combination. We briefly discuss the phylogenetic relationships of these species and provide distribution maps of their Tasmanian records. *Australomimetus mendax* is the only species currently endemic to Tasmania. All other species exhibit wide distribution patterns from tropical Queensland to Western Australia. The ranges of *A. aurioculatus* and *A. audax* – species originally thought to be Tasmanian endemics – are now extended to include the Australian mainland as well. The cosmopolitan genus *Mimetus* Hentz 1832 is restricted and excludes all pirate spiders with a Tasmanian distribution.

Keywords: Araneomorphae, *Australomimetus*, Entelegynae, *Ero*, *Mimetus*

Spiders of the family Mimetidae have long been recognized for their conspicuous araneophagic feeding ecology (Wiehle 1953; Cutler 1972; Jackson & Whitehouse 1986; Kloock 2001). They are also notable for the controversies and conflicting hypotheses concerning their systematic affinities, with some authors suggesting placement in the superfamily Palpimanoidea (Forster & Platnick 1984; Coddington et al. 2004) or, alternatively, the superfamily Araneoidea (Schütt 2000, 2003; Griswold et al. 2005). There has been no broad taxonomic treatment of the family since Platnick and Shadab's (1993) revision of the species of Chile which represented a first modern attempt to delimit the South American genera. Some additional revisions or taxonomic treatments have since been published, but remain regional in focus (Thaler et al. 2004; Barrion & Litsinger 1995; Paquin & Dupérré 2003). The Australian fauna has not yet been studied using modern methods of phylogenetic reconstruction and, as with many other spiders, the Australian mimetids have had a checkered taxonomic history due in part to the rareness of specimens in museum collections and the lack of published studies on ecology and distribution.

The first Australian mimetid – *Australomimetus maculosus* (Rainbow 1904) – was described from New South Wales and placed, with reservations, within the cosmopolitan genus *Mimetus* Hentz 1832 by Rainbow (1904), who drew on the generic concept outlined by Simon (1892–1895). Similar species had already been described from New Zealand and placed incorrectly at the family level in taxa such as *Linyphia* Latreille 1804 (Linyphiidae) (Urquhart 1891) or alternatively in *Mimetus* (Cambridge 1879; Bryant 1935).

Before the rich spider fauna of the Australian mainland began to attract detailed attention, three mimetids were described from Tasmania and were also assigned either to *Mimetus* or *Ero* C.L. Koch 1836 – the latter representing the second cosmopolitan genus within the family (Hickman 1929). These generic designations remained doubtful since the Australian species did not fit comfortably into Simon's classical concept of mimetid genera, however, Hickman and other early authors preferred not to raise new genera. Furthermore, it was obvious that more undescribed species were still to be found in Tasmania (Hickman 1967). Although the mimetid fauna of both the Australian mainland, and the island of Tasmania, appeared to be unusually diverse for such a small spider family – which currently includes some 160 species (Platnick 2008) – no broad taxonomic treatment of the Australian species was published until the description of 17 additional species from Queensland and New South Wales by Heimer (1986). In this study the new genus *Australomimetus* Heimer 1986 was raised to accommodate these new species and *'Mimetus' maculosus* from the Australian eastcoast became the type species (Heimer 1986). The new genus was based solely on a single, 'absence' character: the lack of a shovel-like appendage on the dorsal edge of the cymbium whose presence was reported as characteristic for *Mimetus* (compare Heimer 1986, fig. 1 with fig. 11). The restrictive nature of this concept became obvious when Heimer (1989) described some new species as *Mimetus*, even though these species are very similar to the type species of *Australomimetus* in somatic appearance and genital morphology. Practical problems also arose from the poor quality of his descriptions and drawings, to the extent that identifying individual specimens became almost impossible. Even Heimer himself confused individual species (Harms & Harvey, in press). Finally, the New Zealand pirate spiders remained in *Mimetus*, although the need for revision of the New Zealand fauna was noted, with some authors suggesting that their current placement is only preliminary (Forster & Forster 1999).

Recently, the mimetid fauna of Western Australia was investigated for the first time, both phylogeneticaly and taxonomically (Harms & Harvey, in press). A cladogram for

the Australian species based on comparative morphology will be presented elsewhere (Harms & Harvey, in press). A preliminary higher level phylogeny for the whole family and its generic structure is also being prepared (Harms & Harvey, in prep.). It now appears that all mimetids from Australia, New Zealand and New Caledonia do form a monophyletic group which is distinct from *Mimetus* and for which the generic name *Australomimetus* can be applied. It will also be shown that neither *Mimetus* nor *Ero* are native to Australia or New Zealand and that all species from Australia and New Zealand currently attributed to one of these supposedly cosmopolitan genera are in fact misplaced. This also holds true for all species from Tasmania which are all assigned in the present paper to *Australomimetus*.

Whilst examining extensive collections of Mimetidae from mainland Australia, some new records of mimetid species previously only known from Tasmania were found. Detailed study revealed five Tasmanian species in total – an increase of two species since Hickman (1929). Additionally, a new species from Tasmania is described here. This present revision permits accurate identification of all known Tasmanian mimetids. We provide the first detailed drawings for all species and redescribe individual species in cases where the original descriptions are poor. An identification key is provided, incorporating the generic transfers proposed here. Distribution maps are also provided and species-relationships are briefly discussed. The phylogenetic analysis of *Australomimetus* will be published elsewhere, as will redescriptions of some of the species from the Australian mainland (Harms & Harvey, in press). This present study is intended as a contribution towards elucidating the rich alpha-diversity of Australian pirate spiders.

METHODS

All specimens were examined and illustrated in 70% ethyl alcohol. Female genitalia were dissected with a sharp needle and cleared from surrounding tissue by immersing the dissected structure in a warmed solution of 10% potassium hydroxide, when necessary. Male palpal organs were expanded by immersion in 10% potassium hydroxide at room temperature for several minutes and transferring them back and forth between KOH and distilled water until the desired expansion took place. Measurements were taken using a graticule calibrated in millimetres. Illustrations were produced using a combination of a camera lucida and photographs taken with a Canon G6©. Digital image manipulation was carried out using Adobe Photoshop 7.0©. Text figures were prepared using CorelDRAW© Version 9.0. Maps were generated using ArcView© Version 3.1 after conversion of Excel-files into D-Base IV formats.

The specimens listed in this study are lodged in the following institutions: Australian Museum, Sydney, Australia (AM); Muséum d'Histoire Naturelle, Genève, Switzerland (MHNG); Queensland Museum, Brisbane, Australia (QM); Queen Victoria Museum, Launceston, Australia (QVM); Western Australian Museum, Perth, Australia (WAM).

The following abbreviations are used throughout the manuscript. Eyes: AME = anterior median eyes; ALE = anterior lateral eyes; LE = lateral eyes; ME = median eyes; MOQ = median ocular quadrangle; PME = posterior median eyes; PLE = posterior lateral eyes. Epigynum: BP = basal plate, ID = insemination duct, R = receptaculum. Male pedipalp: CY = cymbium, DMS = distomedial sclerite of the embolic division, E = embolus, MES = medioectal sclerite of the embolic division, PA = pedipalpal patella, PBL = paracymbial basal lobe, PC = paracymbium, PML = paracymbial medial lobe, ST = subtegulum, TE = tegulum, TI = pedipalpal tibia, TR = trichobothria of the male pedipalpal tibia, TSD = tegular sperm duct. Spinnerets: AS = anterior spinnerets; PLS = posterior lateral spinnerets; PMS = posterior median spinnerets. Spigots: AC = aciniform gland spigots(s), CO = colulus, CY = cylindriform gland spigot(s), PI = pyriform gland spigot(s), SH = serrate hairs.

SYSTEMATICS

Family Mimetidae Simon 1881
Genus *Australomimetus* Heimer 1986

Australomimetus Heimer 1986:115; Platnick 1989:169.

Mimetus Hentz 1832: Rainbow 1904:330 (in part); Hickman 1929:107 (in part); Roewer 1942:1021 (in part); Bonnet 1957:2917, 2920 (in part); Hickman 1967:50 (in part); Platnick 1993:155 (in part).

Ero C.L. Koch: Hickman 1929:114 (in part); Roewer 1942:1019 (in part); Bonnet 1956:1799 (in part); Heimer 1986:135 (in part); Platnick 1989:171 (in part); Platnick 1993:154 (in part).

Type species.—*Mimetus maculosus* Rainbow 1904, by original designation.

Diagnosis.—Species of *Australomimetus* possess a unique conformation of the male pedipalp. There is a massive, but simple sclerite in a distal position (DMS) which serves as a functional conductor and is often adorned with additional sclerotizations in medioectal position (MES) (Figs. 5a–c; 8a–b, 11c). The cymbium is always slender and lacks additional sclerotizations or distinct retrolateral sclerotizations (e.g. Figs. 8a–b). The paracymbium is usually elongate, well-pronounced and can contain additional lobes or sclerotizations (Figs. 2d, 11b). Females of the genus have cylindriform gland spigots on the posterior spinnerets which are enlarged and rotund. They are smooth and lack any incisions (Fig. 3a–b). Males of *Australomimetus* can be distinguished from the closely related genera *Mimetus* and *Phobetinus* in lacking a retrolateral extension of the cymbial margin (''shovel'') and in possessing a well-pronounced, elongate paracymbium (compare e.g. Paquin & Dupérré 2003, figs. 1946, 1149, 1952 with Figs. 5e–f or 8a–b). Females of *Australomimetus* can be distinguished from females of *Ero* and *Mimetus* in lacking the conspicuous incisions on the enlarged and rotund cylindrical gland spigots (Figs. 3a-b). The cylindriform gland spigots in *Australomimetus* also appear to be more slender.

Description.—Small to medium sized, araneomorph spiders (5–15 mm).

Eyes: eight heterogeneous eyes; AME largest and moderately protuberant; ALE and PLE protuberant and juxtaposed, secondary eyes with tapetum; two spines between AME (Figs. 2c, 5d, 11a; also Forster & Platnick 1984, fig. 378).

Clypeus: narrow and about AME diameter; with small solitary setae in a typical arrangement (one seta halfway between AME and suture of paturon; 4 setae median at suture

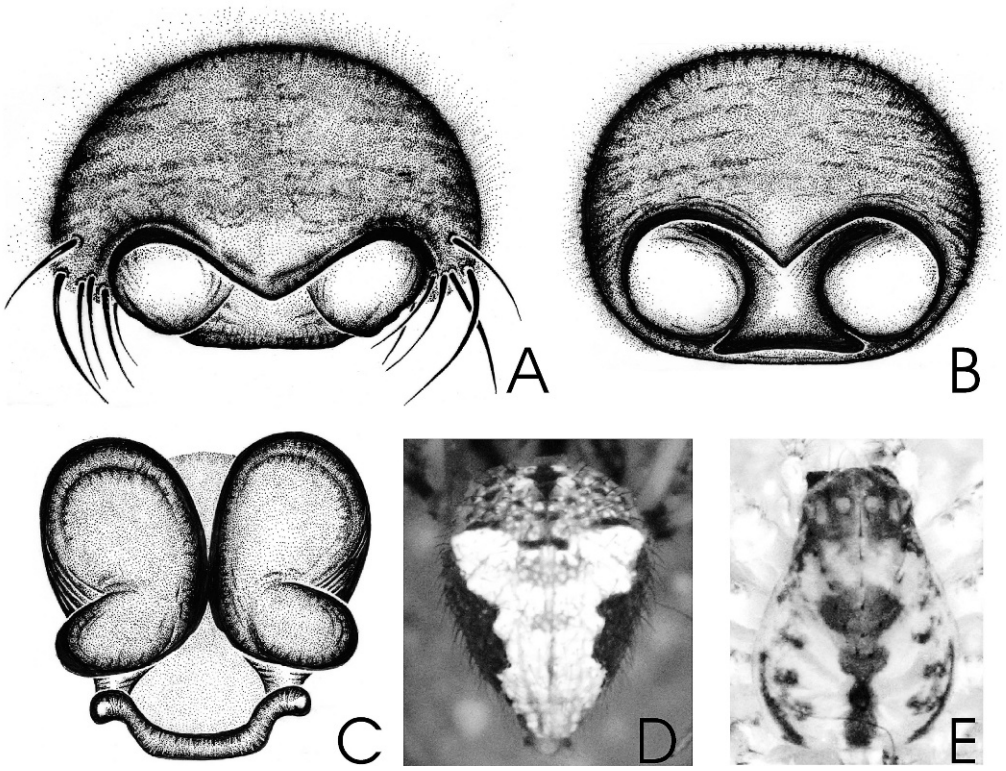

Figure 1.—*Australomimetus audax*, female holotype. A. Epigynum, ventral view; B. Same, posterior view (Note that the epigyne is almost oval in shape.); C. Receptacula; D. Opisthosoma, distal view (Note the presence of a prominent creamy triangular folium with serrated margins.); E. Carapace, frontal view.

of paturon), all setae directed downwards (Forster & Platnick 1984, fig. 377).

Carapace: oval with slightly or strongly attenuated and sloping cephalic region (e.g. Fig. 2c; also Heimer 1986, fig. 17). Cuticle of pars cephalica with three longitudinal rows of spines which extend toward fovea; median line straight, lateral lines directed interior and extending from PE tubercle to fovea (Fig. 5d). Fovea evident, ovoid and slightly depressed; pars thoracica with two fields of small and inconspicuous conical spines.

Chelicerae: paturon elongate and directed vertically, basally fused (Forster & Platnick 1984, fig. 377; also Heimer 1986, fig. 18). Distal promargin adorned with peg teeth; retromargin with one or two small teeth (Forster & Platnick 1984, fig. 381). An evident diastema present (Schütt 2003); cuticle finely reticulated. Labium subtriangular, longer than wide and not rebordered (Forster & Platnick 1984, fig. 382); endites longer than wide with a reddish submarginal serrula.

Sternum: scutiform, longer than wide (e.g. Forster & Platnick 1984, fig. 392).

Legs: formula I, II, IV, III (rarely I, IV, II, III). Forelegs relatively long and armed with spines; tibiae and metatarsi with one to three rows of raptorial spines along the anterior prolateral surfaces, where long erect spines are interspersed by three or four smaller bent ones (e.g. Forster & Platnick 1984, fig. 383). Femora I (retrolateral) and II (prolateral) with a conspicuous longitudinal row of short conical spines; robust species with a similar, but less evident, row on retromargin of femur II (Heimer 1986, fig. 19). Tarsal organ capsulate with round orifice (Griswold et al. 2005). All hairs serrate, cuticle squamate. Tibiae with two rows of trichobothria (Fig. 8a), metarsi with one trichobothrium in a subapical position and tarsus without trichobothria. Three claws; accessory claws present.

Opisthosoma: broadly oval to slightly triangular. Cuticle with strong, but isolated setae (Fig. 1d); humps may be present, but are not frequent (e.g. Mascord 1970, figs. 65–66). Two booklungs and a single tracheal spiracle anterior to spinnerets.

Pedipalp: female pedipalp with one claw. Male pedipalp with slender and hirsute cymbium without sensory setae; paracymbium elongate, in subbasal position and frequently with secondary sclerotizations or lobes (Figs. 5e–f, 11b–c). Subtegulum and tegulum aligned via haematodocha; tegular sperm duct visible, straight to strongly curved (e.g. Figs. 2a, 5b, 8a, 11c). Distal sclerite (DMS) of pedipalp simple and in median position, broadly fused to tegulum and conducting embolus medially and distally, often with additional sclerotizations in a basal position (e.g. Figs. 2a, 8a–b). Further sclerotizations (MES) may be found medioectally between cymbial tip and DMS (Figs. 8a–b; 9c). Embolus strongly sclerotized, prolonged and twisted around DMS (Figs. 2b, 8b), embolic origin often inserted onto tegulum via a small, triangular sclerotized plate. Palpal tarsus not, or only slightly, twisted; cymbium situated rather distad and not lateral. Pedipalpal patella usually with 3 spines, reductions occur in *A. mendax* new species (2 spines) and *A. tasmaniensis* (Hickman) (1 spine).

Female genitalia: entelegyne but simple, heavily sclerotized with two oval atria and two short, sclerotized insemination

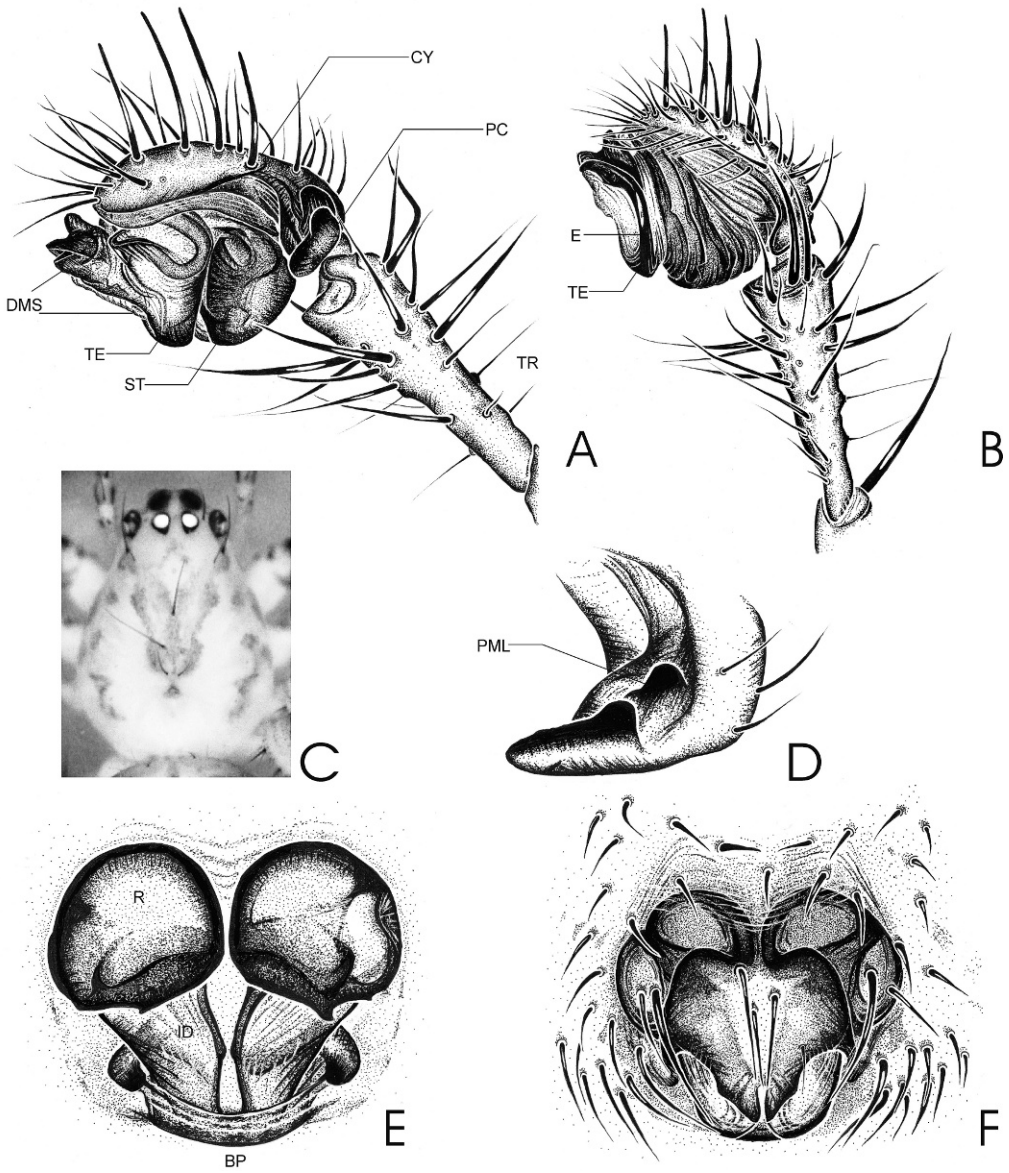

Figure 2.—*Australomimetus aurioculatus*. A. Male pedipalp, retrolateral view; B. same, prolateral view (Note that the tip of the DMS is convexe in lateral view and that the tegular sperm duct (TSD) is strongly curved. The cymbium is adorned with a row of strong spines.); C. Female carapace, frontal view; D. Paracymbium, lateral view; E. Receptacula; F. Epigynum, ventral view.

ducts (Figs. 2e, 6b–e). Receptacula strongly sclerotized and thick-walled without additional glandulae; spherical to globular and never with additional lobes (Fig. 6e, also 9e). A small epigynal "scape" might be present (e.g Heimer 1986, fig. 14).

Spinnerets: ecribellate, six spinnerets present. Colulus present, fleshy and adorned with some setae. AS largest and conical. PLS short and inconspicuous. PMS medium-sized. PLS and PMS with a single cylindiform gland spigot each (Fig. 3b); cylindriform spigots enlarged, rotund and smooth without incisions. Triad absent (Figs 3a–b). Anus adorned with some setae and labellate.

Note that the cylindriform gland spigots differ in shape from those of *Ero* and *Mimetus*. Females of the latter genera possess somewhat bud-shaped cylindriform gland spigots with longitudinal incisions (Platnick & Shadab 1993, figs. 26–28). Please see Harms & Harvey (in press) for a detailed discussion on spigot structure in *Australomimetus*.

Distribution.—The genus was described first only from Queensland and New South Wales and was thus accordingly endemic to the Australian mainland (Heimer 1986, 1989). However, all species of pirate spiders from Tasmania and New Zealand – currently assigned to either *Mimetus* or *Ero* – will also be referred to this genus (Harms & Harvey, in press). Three additional species from New Caledonia and Indonesia will be described elsewhere as *Australomimetus* and two species from Japan and China also seem to belong here (Harms, in press). Consequently, a predominantly Australasian distribution for the taxon must be assumed, with a distribution range that includes the complete Australian region but also south-

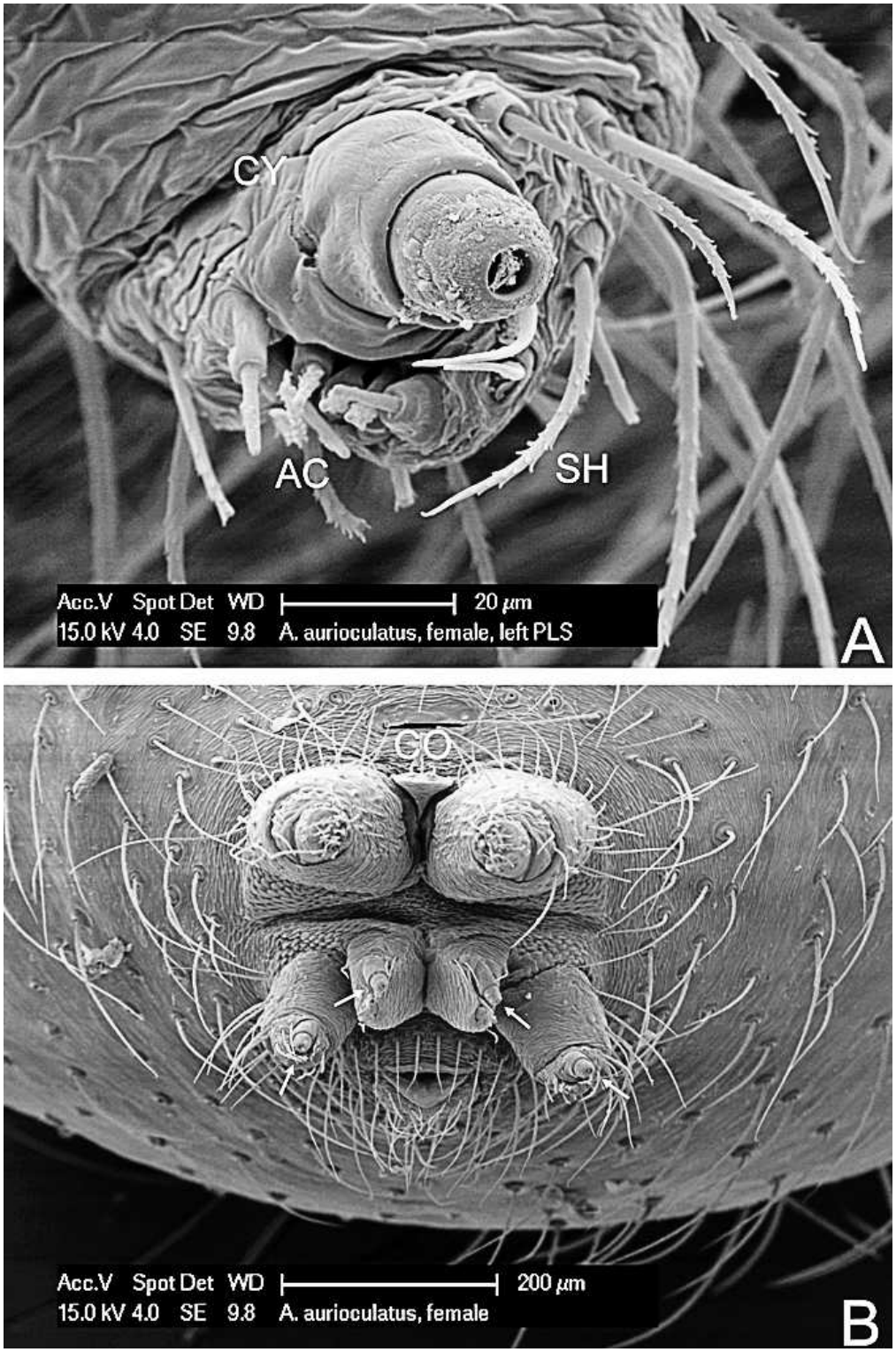

Figure 3.—*Australomimtetus aurioculatus*, female. A. Detailed view of posterior lateral spinnerets. The cylindriform gland spigot is rotund and enlarged but lacks any incisions or ridges. B. Overview of spinnerets, ventral view. Arrows point to the position of the cylindriform gland spigots. Note that all posterior spinnerets bear a single, rotund and enlarged cylindriform gland spigot. See also Harms & Harvey (in press) for a detailed discussion of spigot structures in *Australomimetus*.

eastern Asia. In Asia, species of *Australomimetus* exist sympatrically with other genera of Mimetidae: *Phobetinus* Simon, 1895 (south-eastern Asia and India); *Mimetus* (worldwide, except Australia and Antarctica) and *Ero* (also worldwide except Australia and Antarctica). The fauna of Asia is therefore exceptionally rich in genera whereas *Australomimetus* is the only genus native to the Australian region.

Included species.—*Australomimetus andreae* Heimer 1989, *A. annulipes* Heimer 1986, *A. audax* (Hickman 1929) new combination, *A. aurioculatus* (Hickman 1929) new combination, *A. burnetti* Heimer 1986, *A. childersiensis* Heimer 1986, *A. daviesanus* Heimer 1986, *A. hartleyensis* Heimer 1986, *A. hertelianus* Heimer 1986, *A. hirsutus* Heimer 1986; *A. kioloensis* Heimer 1986, *A. maculosus* (Rainbow 1904), *A. mendax* new species, *A. miniatus* Heimer 1986; *A. pseudomaculosus* Heimer 1986, *A. raveni* Heimer 1986, *A. robustus* Heimer 1986, *A. spinosus* Heimer1986, A**.** *subspinosus* Heimer 1986; *A. sydneyensis* Heimer 1986, *A. tasmaniensis* (Hickman 1929), *A. triangulosus* Heimer 1986.

KEY TO THE TASMANIAN SPECIES OF MIMETIDAE

The Tasmanian fauna comprises five species of *Australomimetus*, of which one is known from the female only. All have been recently collected from the Australian mainland and only *A. mendax* appears to be truly endemic to Tasmania.

1. Leg formula I IV II III 2
   Leg formula I II IV III 3
2. Carapace framed by dark lateral line (Fig. 11a); clypeus higher than AME diameter . . . . . *A. tasmaniensis*
   Opisthosoma with conspicuous whitish dorsal folium (Fig. 1d); clypeus ca. AME diameter . . . . . *A. audax*
3. Males 4
   Females 6
4. Pedipalpal tibia with six trichobothria . . . . . *A. maculosus*
   Pedipalpal tibia with less than six trichobothria 5
5. Cymbium with four slender but strong spines in a row; tegular sperm duct strongly curved (Figs. 2a, b); tegulum without distobasal processes (Fig. 2a) . . . . . *A. aurioculatus*
   Cymbium without conspicuous spination; tegular sperm duct slightly curved; tegulum with conical distobasal process (Figs 8a–8b) . . . . . *A. mendax*
6. Opisthosoma with dorsal colour patch, framed black and white; epigynum with two large medial depressions (Figs. 9b, d) *A. mendax*
   Opisthosoma without dorsal colour patch; epigynum lacks large depressions 7
7. Large species (> 5 mm); chelicerae uniformly brown . . . . . *A. maculosus*
   Small species (< 5 mm); chelicerae pale or slightly darkened distally . . . . . *A. aurioculatus*

Australomimetus audax (Hickman 1929) new combination
(Figs. 1a–e, 10)

Mimetus audax Hickman 1929:107–110, figs. 4A–D, plate XVII; Hickman 1967:50–52, figs. 87–89, plate IX fig. 1; Roewer 1942:1021; Bonnet 1957:2917; Platnick 1997:228.

Material examined.—*Type:* AUSTRALIA: *Tasmania*: holotype ♀, Launceston (41°27′S, 147°10′E), 25 April 1928, V.V. Hickman (QVM 13:7338; Old type No. 36), examined.

Other material examined: AUSTRALIA: *Victoria*: 1 ♀, Warby Range State Park, 10 km W. of Wangaratta (36°18′S, 146°11′E), 28 July 2000, M. Scholes (QM S54173).

Etymology.—Derived from the Latin audāx (=bold, daring). The type-specimens were collected in webs of *Latrodectus hasselti* – the red back spider – where they were found to prey upon the offspring of the host (Hickman 1929).

Diagnosis.—Medium-sized species (carapace length 2.8–3.0 mm) distinguished from other congeners by a combination of the following characters: leg formula I IV II III, presence of a conspicuous creamy, serrated and triangular folium situated distomedially on the opisthosoma (Fig. 1d), epigynum oval; strongly sclerotized with 2 large, circular genital openings and a broad medial septum (Figs. 1a, b).

Description.—The male is unknown and the female was described by Hickman (1929, 1967). New drawings of the epigynum are provided since the originals are poor (Figs. 1a–c).

Affinities.—This species was described by Hickman (1929) within *Mimetus* based on 3 female specimens. A holotype was not designated and generic placement was not justified or discussed.

Only one female could be found in the collection of QVM; the other females are probably lost. *Mimetus audax* was not included or even mentioned in the revision of the Queensland and New South Wales fauna in which the genus *Australomimetus* was described (Heimer 1986). However, the female genital and somatic characters easily allow referal to *Australomimetus*. The species is probably a member of a group of rather robust taxa with a conspicuous whitish folium in a distomedial position on the opisthosoma (Harms & Harvey, in press). This folium is frequently present in many species from the Australian eastcoast such as *A. burnetti* Heimer 1986, *A. harteyensis* Heimer 1986, *A. raveni* Heimer 1986 or *A. robustus* Heimer 1986 and is also very conspicuous in *A. audax*. Females of this group also share strongly sclerotized genitalia and large genital openings. Adult specimens possess a strongly maculated integument of the legs.

The position of *A. audax* within this group seems equivocal, due in part to the unusual leg formula and the reduction of the epigynal javelined scape with a broadened ectal tip, which is another prominent feature of this species group and is highly conspicuous in *A. robustus*, *A. hartleyensis* and *A. raveni* (e.g., see Heimer 1986: fig. 14). This scape shows reductive tendencies in several species (e.g. *A. mendax*) and is almost

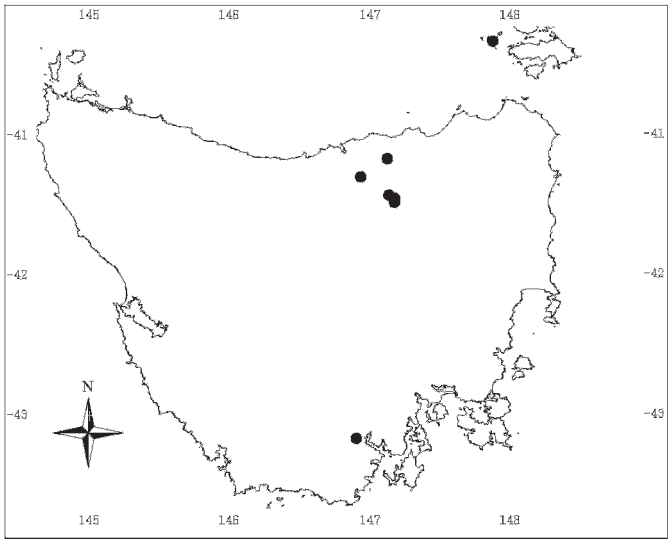

Figure 4.—Tasmanian records for *Australomimetus aurioculatus*.

completely absent in *A. audax*. *Australomimetus audax* is also very similar to *A. mendax* new species in somatic appearance and morphology and both species were probably mixed up by Hickman (1967). On the one hand, *A. audax* was included and figured in his guide to the common spiders of Tasmania although this species is rare and only the type specimens were known for a long time. On the other hand, *A. mendax* is much more common in Tasmania and it seems possible that this species was initially left undescribed because Hickman didn't recognize that there are two similar species.

Distribution.—*Australomimetus audax* is apparently rare and was only known from the three specimens described by Hickman (1929) until another female was found in Victoria. This extends the distribution range for this species to include the Australian mainland (Fig. 10).

Australomimetus aurioculatus (Hickman 1929)
new combination
(Figs. 2a–f, 3, 4)

Mimetus aurioculatus Hickman 1929:110–114, figs. 6 A–C, 7 A–C; Roewer 1942:1021; Bonnet 1957:2917.

Material examined.—*Type:* AUSTRALIA: *Tasmania:* holotype ♂, Launceston (41°27′S, 147°10′E), 05 May 1929, V.V. Hickman (QVM 13:7337; Old type No. 35), examined.

Other material examined: AUSTRALIA: *Tasmania*: 1 ♀, NE. Exeter (41°18′S, 146°56′E), 30 November-9 December 2004, L.J. Boutin (QVM 13:44547); 1 ♀, 3 juveniles, WARRA Forest near Geeveston (Site C) (43°10′S, 146°54′E), 29 November 2001, L.J. Boutin (QVM 13:44549); 1 ♀, Launceston (41°26′S, 147°08′E), 1 April 1971, R. Upson (QVM 13:42367); 1 ♀, Launceston, Youngtown (41°29′S, 147°10′E), 18 May 1989, T. Boyd (QVM 13:42335); 1 ♀, Piper's River (41°10′S, 147°07′E), 6 July 1998, T. Kingston et al. (QVM 13:42164); 1 ♀, Mount Chapell Island, Bass Strait (40°20′S, 147°52′E), 29 July–7 August 1989, T. Kingston et al. (QVM 13:44550).

Etymology.—The species was named for the golden colouration of its eyes, a common feature amongst pirate spiders. The pigment, however, quickly fades in alcohol.

Diagonsis.—Small species (carapace length 1.2–1.4 mm) distinguished from other congeners by a combination of the following genitalic characters: tip of the distomedial sclerite in the male pedipalp convexe in lateral view and without additional sclerotizations, tegular sperm duct strongly curved (Fig. 2a); cymbium with four or five slender but strong spines (Figs. 2a–b).

Description.—The species was described by Hickman (1929) and redescribed by Harms & Harvey (in press). New genital drawings are provided since the original drawings are poor (Figs. 2a–f).

Variation.—The Tasmanian specimens are slightly to considerably larger than specimens from Western Australia and Queensland. Colour patterns are also more conspicuous and the cuticle is darker. Additionally, the epigynum of the Tasmanian species is often more strongly sclerotized and somewhat more conspicuous. The basal plate of the epigynum is hemiquadratic and mostly strongly pronounced. However, epigyna may vary and care must be taken in species identification because morphologically similar species exist on the Australian mainland.

Affinities.—This species clearly belongs to *Australomimetus* as it shares in the male the typical conformation of the pedipalp which includes a slender cymbium without appendages (Fig. 2a), an elongate paracymbium (Fig. 2d) and the distomedial sclerite (DMS) of the male pedipalp (Fig. 2a). Adult females possess a single cylindriform gland spigot on each posterior spinneret which is enlarged, rotund and smooth without visible incisions (Figs 3a–b).

Within the genus *A. aurioculatus* belongs to a monophyletic group of small species with reddish and orange opisthosomal colour spots, a weak maculation of the integument of the legs and a simple male pedipalp lacking medioectal sclerites (MES). These species also share a short cheliceral paturon (Heimer 1986). This group includes species such as *A. triangulosus* Heimer, 1986, *A. miniatus* Heimer 1986 and *A. hirsutus* Heimer 1986 as well as an as yet undescribed specis from New Caledonia (Harms & Harvey, in press).

Distribution and biology.—*Australomimetus aurioculatus* was originally described with no other locality than Tasmania. However, the species shows a wide distributional range and new records are established for Western Australia, New South Wales, Victoria and southern Queensland (Harms & Harvey, in press). Only the Tasmanian records are considered here (Fig. 4). The species seems to be a habitat generalist.

Australomimetus maculosus (Rainbow 1904)
(Figs. 5a–f, 6a–e, 7)

Mimetus maculosus Rainbow 1904:330–332, figs. 40–42, plate XLVI figs. 5–6; Roewer 1942:1021; Bonnet 1957:2920.

Australomimetus maculosus (Rainbow): Heimer 1986:124, figs. 17–23; Platnick 1989:170.

Material examined.—*Type material:* AUSTRALIA: *New South Wales*: syntypes,1 ♂, 6 ♀, 2 juveniles, Jenolan Caves, 29 August 1901 (AM KS5821), not examined.

Other material examined: AUSTRALIA: *Tasmania*: 1 ♀, Ulverstone, 20 Stanley Street (41°10′S, 146°11′E), 11 April 1997, A.F. Longbottom (WAM T75930); 1 ♀, Forester, 2.5 km NW of Mount Horror (41°04′S, 147°40′E), 22 March 1992, McGowan (QVM 13: 14345); 1 ♀, Exeter, West Tamar

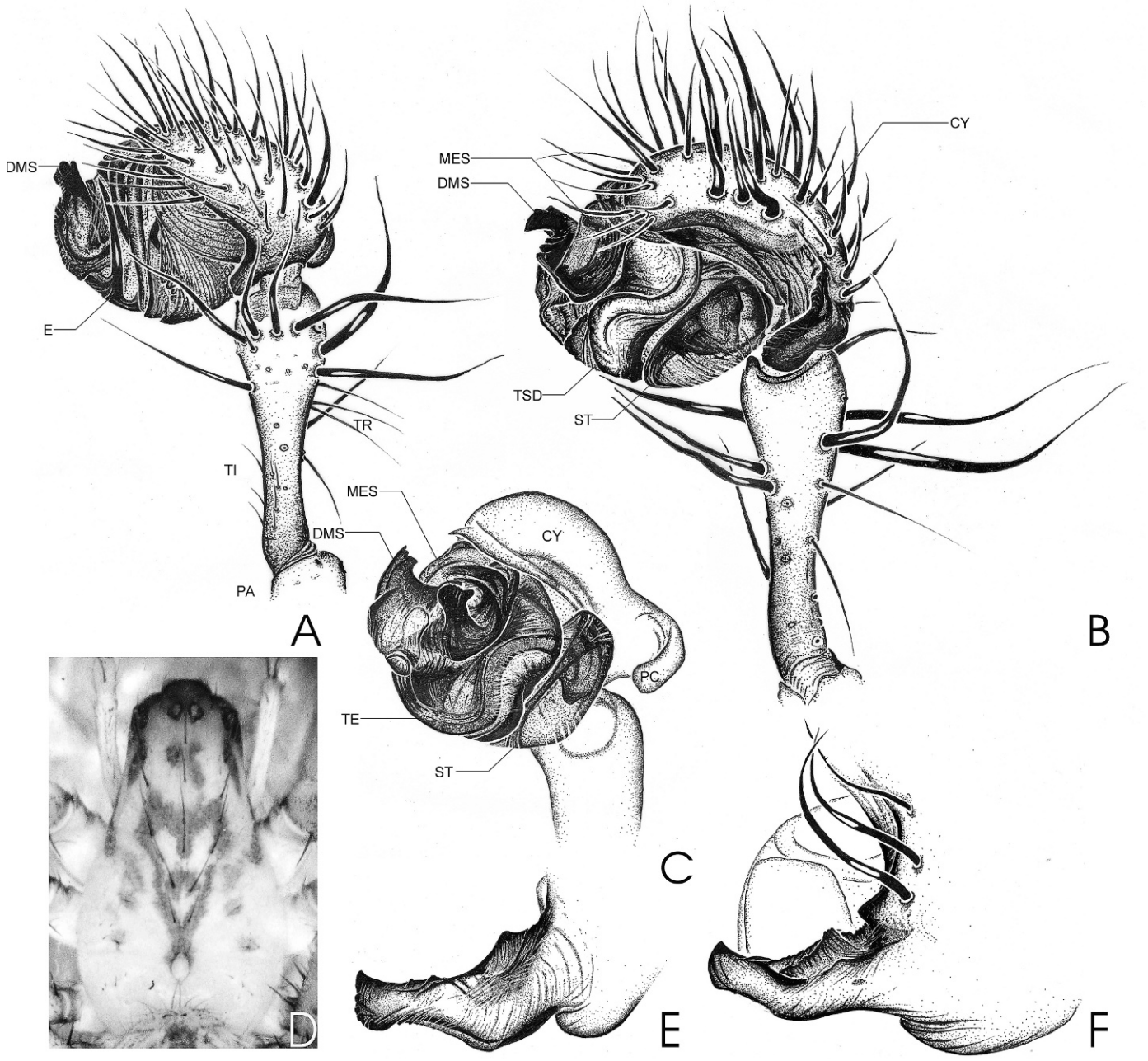

Figure 5.—*Australomimetus maculosus*. A. Male pedipalp, retrolateral view; B. Same, prolateral view (Note the presence of three or four thickened cymbial spines in a retromarginal position.); C. Same, frontolateral view. (The DMS is sickle-shaped and pointed in prolateral view); D. Female carapace, frontal view; E. Paracymbium, variation 1 from Tasmania; F. Paracymbium, variation 2 from Tasmania.

(41°16′S, 146°56′E), 9 December 1962, R.H. Green (QVM 13: 44546); 2 ♀, 1 juvenile, North Coast, Greens Beach (Tamar River) (41°05′S, 146°44′E), 31 October 1970, R.T. Green (QVM 13: 44552); 1 ♀, Launceston (41°26′S, 147°08′E), 10 November 1981, Horne (QVM 13: 42194); 1 ♀, Launceston, Norwood (41°27′S, 147°10′E), 2 May 1972, R. Upson (QVM 13: 42190); 1 ♀, Launceston, Trevallyn (51 Basin Road) (41°26′S, 147°07′E), 30 April 1988, L.R. Martin (QVM 13: 42328); 1 ♂, Launceston (41°26′S, 147°08′E), 1 April 1971, R. Upson (QVM 13: 42366); 4 ♀, 3 ♂, Launceston (41°27′S, 147°08′E), 1 February 1987, R. Raven, T. Churchill (QM S562). *Victoria:* 1 ♂, Emerald (37°56′S, 145°27′E), 24 March 1981, M.S. Harvey (WAM T74784); 1 ♀, 1 ♂, Surrey Hills, 2 Alistair Court (37°49′26′S, 145°05′E), 15 June 1981, M.S. Harvey (WAM T74783); 1 ♀, Balwyn, 16 Fitzgerald Street (37°48′S, 145°04′E), 9 April 1981, M.S. Harvey (WAM T74785); 1 juvenile, Rye, 9 Yolland Street (38°22′S, 144°49′E), 25 December 1981, M.S. Harvey (WAM T81484); 1 ♂, Canterbury, 7 Quantock Street (37°49′S, 145°04′E), 4 April 1978, M.S. Harvey (WAM T74787); 1 penultimate ♂, Balwyn, 24 Yandilla Street (37°48′S, 145°05′E), 23 August 1981, M.S. Harvey (WAM T74786); 1 subadult ♀, Balwyn, 24

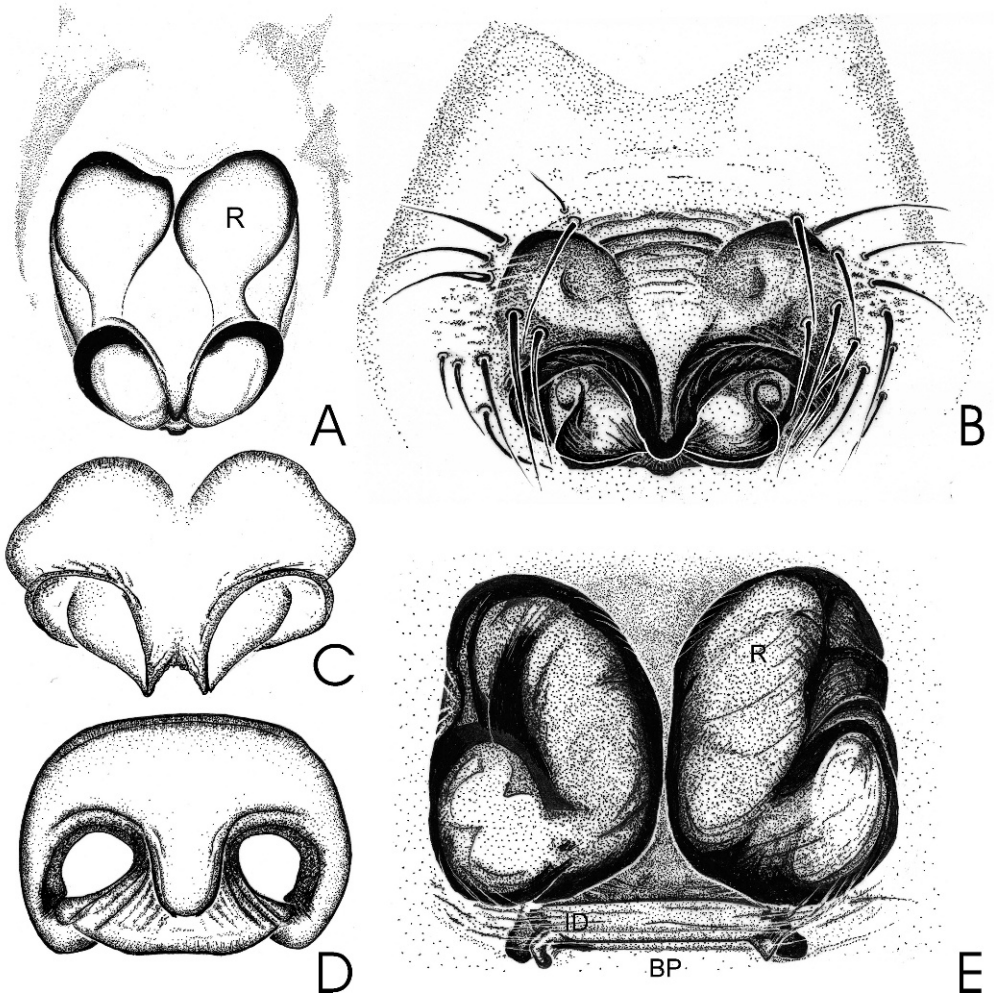

Figure 6.—*Australomimetus maculosus*, female. A. Epigynum, ventral view; variation 1 from Victoria. B–E. Same, variation 2 from Tasmania: B. Epigynum, ventral view; C. Same, anterior view; D. same, posterior view; E. Receptacula.

Yandilla Street (37°48′S, 145°04′E), 1 May 1981, M.S. Harvey (WAM T81485); 1 penultimate ♂, Knoxfield (37°53′S, 145°14′E), 21 February 1981, M.S. Harvey (WAM T81486). *Queensland:* 1 ♀, Edmonton (17°01′S, 145°44′E) 10 September 1969 (MHNG, Collection Heimer); 1 ♀, 1 ♂, Mount Goonaneman near Childers (25°26′S, 152°07′E), 3–7 October 1980 (MHNG, Collection Heimer); 2 ♂, Barron Gorge (16°52′S, 145°39′E), January 1981, R.R. Jackson (QM S32006); 1 ♀, Bellenden Ker Range (17°14′S, 145°52′E), 1–7 November 1981, Earthwatch Expedition (QM S6748); 1 ♀, 1 ♂, Redlynch, Crystal Cascades (16°53′S, 145°41′E), January 1981, R.R. Jackson (QM S32033); 1 ♀, Forty Mile Scrub, SW. of Mount Garnet (17°41′S, 145°07′E), 10–13 April 1978, R. Raven, V. Davies (QM S32011); 1 ♀, 1 ♂, Kilcoy Creek (27°00′S, 152°34′S.), 27 September 1978, K.R. McDonald (QM S32032); 1 ♀, 1 ♂, Kilcoy Creek, East branch bridge (27°00′S, 152°34′E), 8 October 1978, K.R. McDonald (QM S32034); 1 ♀, 1 juvenile ♀, Mount Halifax (19°07′S, 145°23′E), 19–21 March 1991, Monteith, Cook (QM S17950); 1 ♀, Mount Moffatt National Park, Mahogany forest (25°09′S, 147°52′E), 12 December 1987, D. Yeates (QM S32064); 1 ♂, Brooyar State Forest via Glastonbury (26°01′S, 152°23′E), Rozefelds, Sinclair (QM S32026); 2 ♀, 1 ♂, 1 juvenile ♂, Bunya National Park (26°51′S, 151°34′E), 6 March 1976, Raven, Davies (QM S32036); 1 ♀, 3 ♂, Kroombit Tops, Dawes Range (24°23′S, 150°57′E), 9–19 December 1983, Davies, Gallon (QM S20416); 1 ♀, Kroombit Tops, Dawes Range, 45 km SSW. of Calliope (24°23′S, 150°57′E), 19 December 1983, Davies, Gallon (QM S32024); 1 ♀, Kroombit Tops, Lower Dry Creek, 45 km SSW. of Calliope (24°23′S, 150°57′E), 9–19 December 1983, Davies, Gallon (QM S32038); 1 ♂, Lamington National Park (28°15′S, 153°08′E), 10 September 1977, R. Raven (QM S32016); 1 ♂, Lamington National Park (28°15′S, 153°08′E), 24 December 1973, R. Raven (QM S32025); 2 ♀, 1 ♂, Lamington National Park, Nagarigoon (28°15′S, 153°08′E), 1–8 April 1976, R. Raven, V. Davies (QM S32070); 1 ♀, 1 ♂, Lamington National Park, Nagarigoon (28°15′S, 153°08′E), 1–8 April 1976, R. Raven, V. Davies (QM S32035); 1 ♂, Lamington Plateau (28°19′S, 153°04′E), 2 April 1975, Raven (QM S32019); 2 ♀, Lamington National Park, Binna Burra (28°11′S, 153°10′E), 5 April 1995, R. Raven (QM S30717); 1 ♀, Mount Glorious (27°23′S, 152°45′E), 1 February 1973, R. Raven (QM S32079); 1 ♀, 2 juveniles, Cooloola National Park, Seary's Scrub (26°12′S, 153°01′E), 3–8 February 1976, R. Raven, V. Davies (QM S32027); 1 ♀, Upper Noosa River (26°23′S, 153°05′E), 9 August 1950, G. Filmer (QM S32037); 1

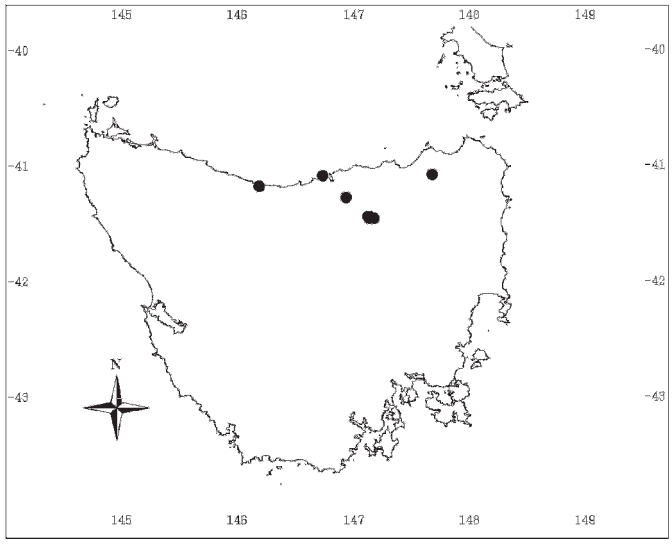

Figure 7.—Tasmanian records for *Australomimetus maculosus*.

♀, Binna Burra Mountain Lodge (28°11′S, 153°10′E), 12 March 1998, P. Lawless (QM S60052); 10 ♀, North Stradbroke Island, Enterprise (27°33′S, 153°28′E), 8 January 2002 (QM S55787); 1 ♀, Hann Tableland (North End) (16°49′S, 145°11′E), 13 December 1995, Monteith, Cook, Thompson (QM S40492); 1 ♀, Mount Cotton (27°37′S, 153°13′E), 3 September–12 December 1997, G. Monteith (QM S44286); 1 ♀, 3 km S. of Mt. Spurgeon (16°27′S, 145°11′E), 19–23 November 1997, Monteith, Cook & Burwell (QM S43327); 6 juveniles, Mount Goonaneman near Childers (25°26′S, 152°07′E), 3–7 November 1980, V. Davies, R. Raven (QM S32020); 1 ♂, Top of Blackbutt Range (26°52′S, 152°11′E), 29 July–23 October 1995, G. Monteith (QM S37453); 1 ♂, Springbrook, North End (28°12′S, 153°16′E), 15 May–30 August 1997, G. Monteith (QM S43040). *New South Wales:* 1 ♂, Upper East Funnel Creek (21°34′S, 149°12′E), 15–16 November 1992, Monteith, Thompson, Cook, Janetzki (QM S26900).

Etymology.—This species was named for the conspicuous maculation of the integument of the legs and carapace.

Diagnosis.—Large species (carapace length 2.9–3.4 mm) distinguished from other congeners by a combination of the following somatic characters: large body size, cheliceral paturon extremely long in both sexes, more than eleven times diameter of AME and uniformly chestnut brown; absence of a serrated, whitish folium on the dorsal side of the opisthosoma. Males further distinguished from other species by the presence of 6 tibial trichobothria on the pedipalpal tibia as well as the shape of the distal sclerite of the male pedipalp (DMS) which is sickle-shaped and pointed in prolateral view (Fig. 5c).

Description.—*Male (WAM T74783): Carapace (Fig. 5d)*: strongly pyriform, pars cephalica strongly prolonged and elevated, base colour light brown, eye region chestnut brown. Two brown longitudinal patches posterior to PME, two sickle-shaped patches posterior to PLE. Eye region marginally brown. A V-shaped brown patch between fovea and PME, surrounding a smaller V-shaped brown patch with broadened distal prolongation; three mediolateral patchy stripes oblique and longitudinal, the anterior one extending marginal to base of pars cephalica; pars cephalica with three longitudinal setal rows, mediolateral ones oblique and reaching fovea, median line straight; pars thoracica with six mediolateral patches, two fields of 7–8 spinules in a distomedial position are visible. Fovea: ovoid, framed brown. Clypeus: slightly longer than diameter of AME, dark brown with diagonal row of four solitary setae, one further setum medial and more posterior. Eyes: AME tubercle chestnut brown with two setae projecting anteriorly. PE tubercle and PME framed dark brown.

Chelicera: paturon uniformly chestnut brown with two black sutural patches and about eleven times diameter of AME, distal interior margin of paturon unidentate, promargin with about 15 peg teeth (Heimer 1986, fig. 18).

Sternum: with two brown medial and 1 large distal patch, pointed and not extending between coxae IV. Labium: rusty red, apically pallid and longer than wide. Endites: slender, rusty red, apically pallid and greatly exceeding labium.

Opisthosoma: ovoid, without humps, proximally with triad of brown patches, one medial at petiolar base, other ones mediolateral; a large brown patch with transverse margins medially; a pale longitudinal line distally, some grey spots close by; two large grey patches in lateral view, two grey spots proximal to spinnerets; a whitish folium is absent. Ventral side with six grey patches, a grey trapezium anterior to epigastric furrow, a grey square anterior to spinnerets. Spinnerets: yellow, basal segment of AS lateral brown. Setae reddish.

Legs: formula I II IV III, all legs relatively long; number of brown leg rings: leg I, femur 1, patella 0, tibia 4, metatarsus 0, tarsus 0; leg II, femur 1, patella 0, tibia 4, metatarsus 0, tarsus 0; leg III, femur 1, patella 0, tibia 3, metatarsus 0, tarsus 0; leg IV, femur 1, patella 0, tibia 3, metatarsus 1, tarsus 0. Femur I and II with a longitudinal row of very extensive and conspicuous spinules, a smaller row of spinules retrolaterally on coxa I; claws serrate.

Pedipalp (Figs. 5a–c, e–f): patella with three spines, tibia with six trichobothria in two rows; cymbium slender with a row of three or four thickened spines retromarginal in a median position (Figs. 5b, f); paracymbium prolonged, without conspicuous lateral or basal lobes, proximal reinforced by sclerotization (Figs. 5e–f). Tegular sperm duct slightly curved medially (Fig. 5b); distomedial sclerite (DMS) sickle-shaped in retrolateral view and apex pointed, inflecting retrolaterally (Figs. 5a–c); Medioectal sclerite (MES) present and developed as a sclerotized plate with some additional cusps (Figs. 5b–c); embolus medial, tip longitudinal and terminating in groove between medioectal sclerites and distoectal sclerite (Fig. 5a).

Dimensions (mm) (WAM T74783): total length 6.22. Carapace length 3.16, width 2.17, height 0.74; AME 0.185, ALE 0.155, PME 0.180, PLE 0.145, AME–ALE 0.19, PME–PLE 0.18, MOQ front 0.48, PER 0.96, MOQ length 0.39; clypeus 0.25; paturon 1.74. Sternum length 1.37; width 1.10. Opisthosoma length 3.06, height 1.98. Pedipalp: femur 1.49, patella 0.50, tibia 1.04, tarsus 1.03, total 4.06. Leg I: femur 6.40, patella 1.58, tibia 7.38, metatarsus 7.70, tarsus 2.58, total 25.64. Leg II: femur 5.35, patella 1.35, tibia 5.78, metatarsus 5.74, tarsus 2.02, total 20.24. Leg III: femur 3.40, patella 0.915, tibia 2.80, metatarsus 2.75, tarsus 1.27, total 11.135. Leg IV: femur 4.16, patella 0.90, tibia 3.30, metatarsus 3.16, tarsus 1.31, total 12.83.

Female (WAM T74783): As for the male except as follows:

Carapace: mediolateral spots reduced and inconspicuous, only proximal ones well defined. The 2 V-shaped patches fused. Clypeus: uniformly chestnut brown.

Sternum: with 1 distomedial brown patch which is proximomedially incised.

Legs: number of brown leg rings: leg I, femur 3, patella 1, tibia 4, metatarsus 1, tarsus 0. Leg II, femur 3, patella 1, tibia 3, metatarsus 1, tarsus 0. Leg III, femur 2, patella 0, tibia 3, metatarsus 0, tarus 0. Leg IV, femur 1, patella 0, tibia 3, metatarsus 1, tarsus 0.

Pedipalp: patella with 3 spines, the distal spine largest; tibia with 7 trichobothria; claw serrate.

Epigynum (Figs. 6a–e): strongly sclerotized, as long as wide and with 2 large round genital openings (Fig. 6d), medially pointed but always without a scapus (Fig. 6b); posterior view reveals a median septum (Fig. 6d); receptacula slightly ovoid, genital ducts short (Fig. 6e).

Dimensions (mm) (WAM T74783): total length 6.09. Carapace length 3.22, width 2.08, height 0.74. AME 0.187, ALE 0.160, PME 0.156, PLE 0.137, AME–ALE 0.20, PME–PLE 0.28, MOQ front 0.51; PER 1.08; MOQ length 0.52; clypeus 0.35; paturon 2.04. Sternum length 1.42; width 1.11. Opisthosoma length 2.87; height 2.14. Pedipalp: femur 1.10; patella 0.50; tibia 0.94, tarsus 1.685, total 4.225. Leg I: femur 5.70, patella 1.58, tibia 6.34, metatarsus 5.74, tarsus 2.43, total 21.80. Leg II: femur 4.70, patella 1.35, tibia 4.70, metatarsus 4.43, tarsus 2.05, total 17.23. Leg III: femur 3.26, patella 0.79, tibia 2.37, metatarsus 2.50, tarsus 1.31, total 10.23. Leg IV: femur 3.89, patella 0.915, tibia 3.18, metatarsus 2.97, tarsus 1.38, total 12.335.

Variation.—Specimens from Tasmania are considerably larger than specimens collected from tropical Queensland. The female genitalia are variable and sometimes strongly sclerotized so that only 2 genital openings are visible upon a uniform brown medial plate. The medial posterior prolongation of the epigyne can also be reduced. The receptacula range from globular to slightly ovoid. A selection of common epigynal shapes is given in Figs. 6a, c–d. The paracymbium sometimes has a small ectal hook; the shape of the proximal reinforcement varies (Figs. 5d–e). However, identification of *A. maculosus* is easy by virtue of their massive size. The male pedipalp shows almost no variation and is diagnostic. The number of trichobothria on the palpal tibia also seems to be consistent.

Affinities.—*Australomimetus maculosus* is probably sister to *A. pseudomaculosus* (Harms & Harvey, in press). Males of both species share a similar shape of the distomedial sclerite (DMS) and medioectal sclerotizations (MES) of the male pedipalp, strong medial spines on the retromargin of the cymbium as well as six pedipalpal trichobothria. The species have reduced distomedial colour patterns on the opisthosoma and are the largest within the genus.

Australomimetus pseudomaculosus apparently does not occur in Tasmania. Males can be distinguished from *A. maculosus* by the presence of a medially elevated cymbium in lateral view (Heimer 1986, fig. 24). The shape of the female genitalia is also distinct from *A. maculosus* (Heimer 1986, fig. 25).

The reduction of opisthosomal colour patterns in adult specimens of *A. maculosus* and *A. pseudomaculosus* must be secondary since juveniles still possess an inconspicuous, serrated folium. The species are not closely related to *A. daviesanus* Heimer 1986 which also has the colour patterns reduced and shows a somewhat similar pedipalp (e.g. Heimer 1986, fig. 11).

Distribution and biology.—*Australomimetus maculosus* only occurs in eastern Australia, but has a wide distribution from Tasmania to tropical Queensland (Heimer 1986; Harms & Harvey, in press). It is the most common species in Australian collections. It has also been sampled from various localities in the North of Tasmania (Fig. 7). Synanthropic tendencies seem likely because it was frequently collected inside houses where it prefers dark corners and secluded places. It also occurs in caves, but such individuals do not show special morphological adoptions and the entire life cycle may not occur here. Interestingly, neither *A. maculosus* nor *A. pseudomaculosus* have been found in Western Australia. This may indicate that the species evolved in eastern Australia. The huge deserts and drylands of the Nullarbor Plain and Northern Territory may now act as effective barriers that prevent this species from a westward range extension.

Australomimetus mendax new species
(Figs. 8a–b; 9a–e, 10)

Material examined.—*Type material:* AUSTRALIA: Tasmania: holotype ♂, Wombat Hill (41°29′S, 145°26′E), 20 September 1990, R. Mesibov (QVM 13: 44524). Paratypes: AUSTRALIA: Tasmania: 2 ♀, same data as holotype (QVM 13: 44524); 1 ♀, same data as holotype except 24 September 1990 (QVM 13: 44525); 1 ♀, same data as holotype except 28 September 1990 (QVM 13: 44528), 2 ♀, same data as holotype except 19 September 1990 (QVM 13: 44526); 1 ♀, 2 ♂, Franklin River (Picnic Ground) (42°19′S, 145°47′E), 29 May 1987, T. Churchill & R. Raven (QM S29747); 1 ♂, N. of Mount Sprent via Strathgordon (42°40′S, 146°02′E), 23–25 January 1987, R. Raven, J. Gallon (QM S5696); 1 ♂, N. of Mount Sprent via Strathgordon (42°40′S, 146°02′E), 23–25 January 1987, R. Raven, J. Gallon (QM S32090).

Other material examined.—AUSTRALIA: *Tasmania*: 1 juvenile, Franklin River (Picnic Ground) (42°19′S, 145°47′E), 29 May 1987, Churchill & R. Raven (QM S29747); 1♀, Jack's Track, 27 April 1987, T. Churchill (QM S33813); 1 ♂, Cradle Mt National Park, Waldheim Forest (41°39′S, 145°57′E), 31 January–4 February 1987, T. Churchill, R. Raven (QM S5531); 1 ♀, WARRA forest near Geeveston (Site OM 5-3), 14 April 2000, D. Bashford (QVM 13: 44544); 1♀, WARRA Forest near Geeveston (Manuka Road) (43°10′S, 146°54′E), 5 May 2004, D. Bashford (QVM 13: 44533); 1 juvenile, Wombat Hill (41°29′S, 145°26′E), 20 September 1990, R. Mesibov (QVM 13: 44524); 1 ♀, Rattler Hill. Coll. R. Mesibov, 4 September 1990 (QVM 13: 44527); 1 ♀, Rattler Hill (41°14′S, 147°52′E), 27 August 1990, R. Mesibov (QVM 13: 44523); 2 juveniles, Magg's Mountain: Field Station (41°45′S, 146°11′E), 4 February 1980, R.H. Green (QVM 13: 42625). 1 ♀ & 2 juveniles, Russell Falls Walk (Site T 001) (42°40′S, 146°42′E), 14 January 2002, L.J. Boutin (QVM 13: 44545).

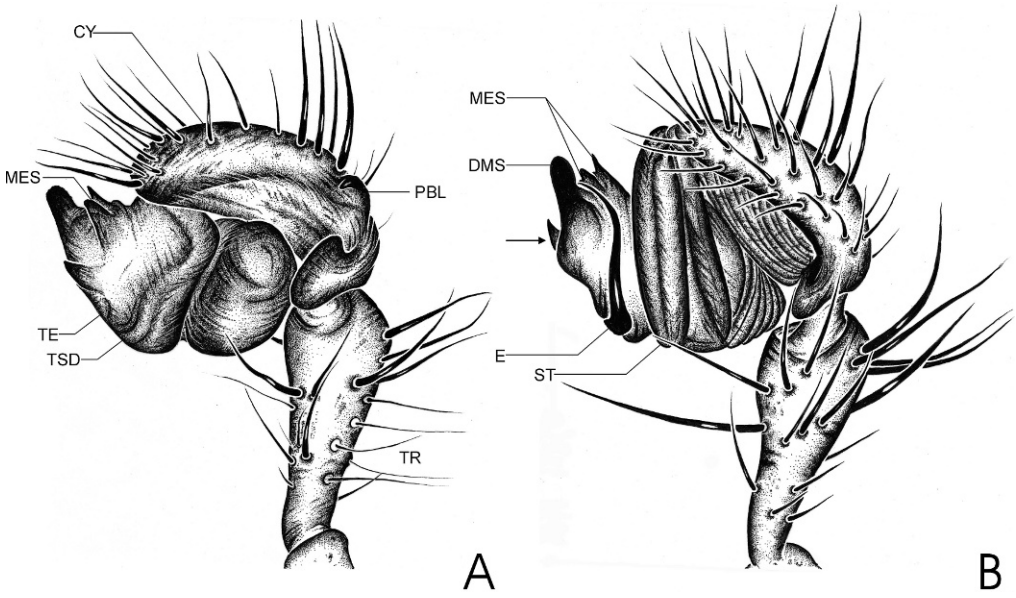

Figure 8.—*Australomimetus mendax*, male. A. Pedipalp, retrolateral view (Note the presence of five trichobothria (TR) on the tibia.); B. Same, prolateral view. Arrow points to the position of the short conical tegular process in a distobasal position. The MES consists of two cusps.

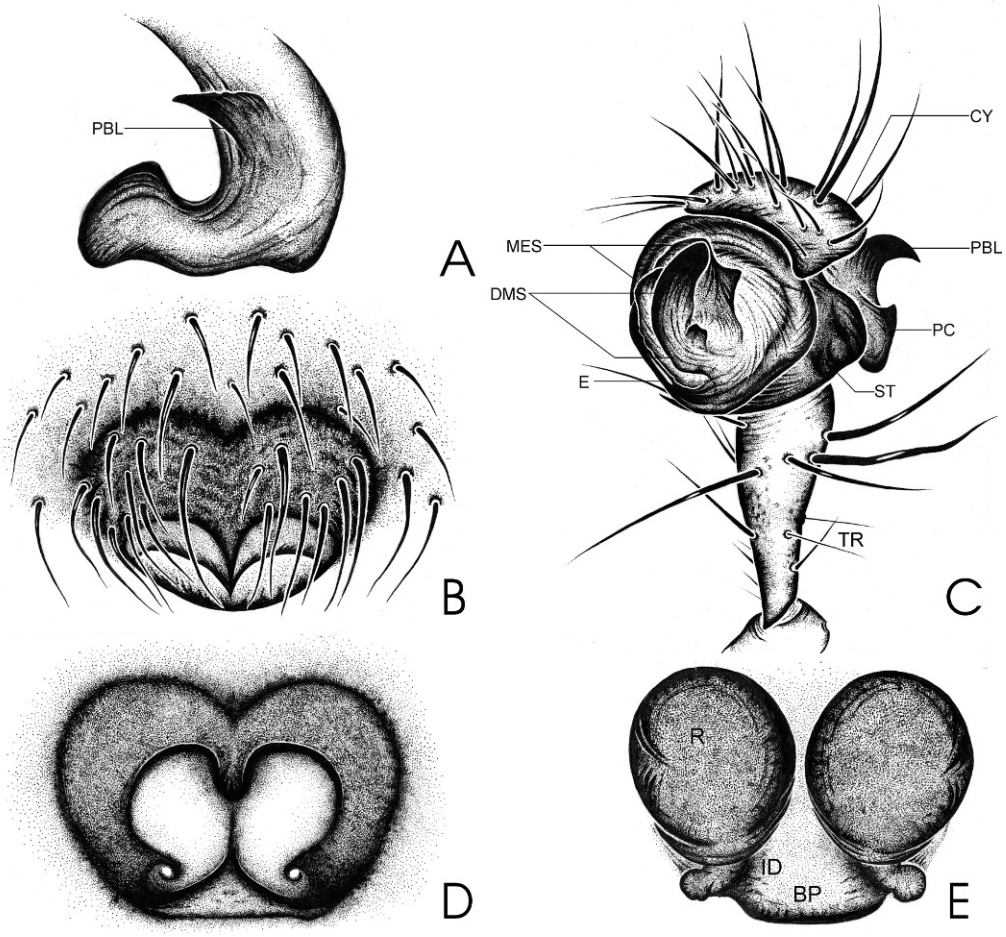

Figure 9.—*Australomimetus mendax*. A. Paracymbium, retrolateral view; B. Epigynum, ventral view; C. Male pedipalp, frontolateral view; D. Epigynum, posterior view (Note the two large medial depressions, the longitudinal median septum and the rather inconspicuous posterior genital openings.); E. Receptacula.

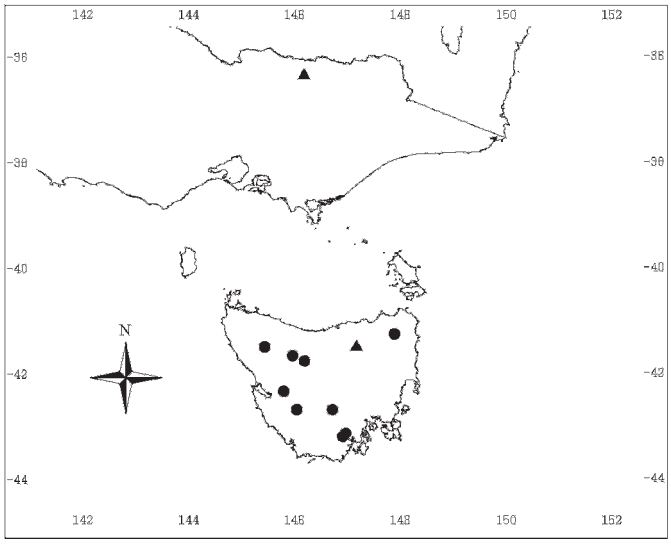

Figure 10.—Australian records for *Astralomimetus audax* (▲) and *A. mendax* (●). The latter species seems to be endemic to the island of Tasmania.

Etymology.—The epithet *mendax* (=liar) is chosen as an indication for the somatic similarities to *A. audax* which may have misled past arachnologists.

Diagnosis.—Medium-sized species (carapace length 1.9–2.6 mm) distinguished from other congeners with a creamy, serrated and triangular folium on the opisthosoma by a combination of the following genitalic characters: Distomedial sclerite (DMS) hook-shaped, elongate and with a conical distobasal process (Figs. 8a–b, arrow; also 9c), Medioectal sclerite (MES) present and with two cusps (Figs. 8a–b); two prominent patellar spines only; tegular sperm duct slightly curved (Fig. 8a). Females further distinguished from other species by the shape of the epigynum which has two large depressions and an inconspicuous medial septum (Figs. 9b–d).

Description.—*Male (holotype, QVM 13: 44524): Carapace:* pyriform and pale yellow; pars cephalica with brown triangular figure which consists of a sharp triangle that reaches the fovea and two lateral brown lines which are medially interspersed and rather spotted; triangle with a longitudinal pale stripe which is weakly defined; three pale colour patches between eyes and fovea, the distal one near fovea and inconspicuous; four brown spots mediolateral on each side, extended to short diagonal stripes and partly fused; margin of carapace with a further spot near base of pars cephalica; pars cephalica with three longitudinal spinal rows, mediolateral lines oblique and reaching fovea, medial line straight, all lines merging anterior to fovea; pars thoracica with two fields of 4–6 spinules in a distomedial position.

Fovea: dark brown to black, ovoid.

Eyes: LE tubercle and PME framed chestnut brown, eyes metallic golden; two spines on AME tubercle, directed anteriorly.

Clypeus: with two grey mediolateral patches and about size of AME diameter; a diagonal line of four solitary setae, the medial ones smaller than lateral ones; a further medial setum more proximal.

Chelicera: paturon proximally pale yellow with prolateral grey margins, distally darkened, about six times length of AME; interior distal margin unidentate, promargin with peg teeth. Labium: longer than wide, yellow with lateral brown patch, distally pallid, suture brown. Endites: yellow with brown margins, distally pallid, longer than wide and converging.

Sternum: pale yellow with six lateral patches and chestnut brown; pointed and not extending between coxae IV.

Opisthosoma: with black pattern near base of petiolus, shaped like an inverted V. Laterally a black line originates which proceeds ventrally and frames the ventral side. Lateral sides with whitish foliae, another distal black line present. Distally a figure consisting of seven black spots on each side, laterally framed by whitish foliae, interrupted by a median longitudinal pale line and discontinuous. Dorsal side with whitish folium, a grey trapezoid figure at base of spinnerets and a grey patch near the tracheal spiracle present; setae yellow and strong, not dense. Spinnerets: yellow. ALS basally brown, lateral sides grey.

Legs: formula I II IV III; number of brown leg rings: leg I, femur 1, patella 1, tibia 3, metatarsus 2, tarsus 0; leg II, femur 1, patella 1, tibia 3, metatarsus 2, tarsus 0; leg III, femur 2, patella 0, tibia 3, metatarsus 2, tarsus 0; Leg IV, femur 0, patella 0, tibia 3, metatarsus 2, tarsus 0. Femur I and II with a longitudinal line of conical spinules, coxa II retrolateral with a second row of sparse spinules; claws inconspicuously serrate.

Pedipalp (Figs. 8a–b, 9c): patella with two macrosetae plus a third short one, tibia with five trichobothria in two dorsal rows (Fig. 8a); cymbium with four strong spines in a subbasal position and slightly inflected retrolaterally; paracymbium simple, elongate, broadened distally and with a scaped basal lobe (Figs. 9a, c); tegular sperm duct slightly curved (Fig. 8a); Distomedial sclerite (DMS) hook-shaped and inflected retrolaterally with a short conical process in a distobasal position, Medioectal sclerite (MES) with two cusps (Figs. 8a–b); tegular-embolic conjunction covered by an additional triangular sclerite in distobasal position, embolic tip longitudinal and terminating between medioectal sclerotizations and hooked distoectal sclerite (Fig. 8b).

Dimensions (mm) (QVM 13: 44524): total length 3.745. Carapace length 1.895, width 1.62, height 0.69; AME 0.138, ALE 0.134, PME 0.130, PLE 0.127, AME–ALE 0.06, PME–PLE 0.154, MOQ front 0.365, PER 0.71, MOQ length 0.31; clypeus 0.13; paturon 0.826. Sternum length 1.01, width 0.72. Opisthosoma length 1.85, height 1.21. Pedipalp: femur 0.77, patella 0.27, tibia 0.54, tarsus 0.653, total 2.24. Leg I: femur 3.39, patella 0.96, tibia 3.50, metatarsus 2.35, tarsus 1.42, total 11.62. Leg II: femur 2.50, patella 0.69, tibia 2.30, metatarsus 2.12, tarsus 1.15, total 8.76. Leg III: femur 1.70, patella 0.52, tibia 1.13, metatarsus 1.10, tarsus 0.77, total 5.22. Leg IV: femur 2.05, patella 0.55, tibia 1.61, metatarsus 1.40, tarsus 0.80, total 6.41.

Female (paratype, QVM 13: 44525): As for male except as follows:

Carapace: mediolateral spots on carapace not striped.

Fovea: Brown.

Chelicera: proximally yellow with two sutural brown patches, medially and distally chestnut brown; paturon about six times diameter of AME. Labium: brown, distally pale, suture black. Endites: brown, distally pale.

Sternum: with merging brown spots, forming uniform figure with six dark brown patches, a yellow patch in a medial position.

Opisthosoma: distal colour figure on opisthosoma not interspersed by colour markings and with a conspicuous outer white and an inner black frame; proximal black line framed white; ventral side with whitish foliae, hexagon of black spots present. Spinnerets: brown, ALS laterally dark brown.

Legs: number of brown leg rings: leg I, femur 1, patella 0, tibia 3, metatarsus 3, tarsus 0; leg II, femur 1, patella 0, tibia 3, metatarsus 3, tarsus 0; leg III, femur 0, patella 0, tibia 1, metatarsus 2, tarsus 0; leg IV, femur 0, patella 0, tibia 2, metatarsus 2, tarsus 0.

Pedipalp: patella with two spines, tibia with 6 trichobothria in 2 dorsal rows.

Epigynum (Figs. 9b–d): subtriangular, sclerotized and pointed; 2 large mediolateral depressions and 2 inconspicuous genital openings in posterior position to these depressions (Fig. 9d), a pointed, medial scapus (frequent in other species of the species-group) is almost absent (Fig. 9b); receptacula ovoid and genital ducts short (Fig. 9e).

Dimensions (mm) (QVM 13:44525): total length 6.08. Carapace length 2.540, width 1.87, height 0.69; AME 0.176, ALE 0.173, PME 0.123, PLE 0.1344, AME–ALE 0.10, PME–PLE 0.19, MOQ front 0.44, PER 0.90, MOQ length 0.41; clypeus 0.34; paturon 1.21; opisthosoma length 3.54, height 2.81; sternum length 1.30, width 0.945. Pedipalp: femur 0.925, patella 0.33, tibia 0.59, tarsus 0.96, total 2,81. Leg I: femur 4.30, patella 1.35, tibia 4.10, metatarsus 2.66, tarsus 1.31, total 13.72. Leg II: femur 3.30, patella 1.06, tibia 2.88, metatarsus 3.66, tarsus 1.46, total 12.36. Leg III: femur 2.23, patella 0.65, tibia 1.60, metatarsus 1.39, tarsus 1.00, total 6.87. Leg IV: femur 2.35, patella 0.65, tibia 1.65, metatarsus 1.54, tarsus 1.04, total 7.23.

Variation.—Some males have four trichobothria on the palpal tibia, whereas most males have five (Fig. 8a). The colouration is somewhat variable in males and not all colour patterns are always visible. The basal lobe of the paracymbium is sometimes shorter and not inflected.

Affinities.—This species is easily mistaken for *A. audax* since the opisthosomal colour patterns and the overall size are very similar. However, characters distinguishing the species are easily recognisable. The leg formula of *A. audax* is I IV II III; the opisthosoma has a prominent creamy whitish figure without black margins. The colour markings on the carapace are distinct. The epigynum is simple and heavily sclerotized with two simple and large genital openings. The distal margin of the cheliceral paturon is bidentate. The leg formula of *A. mendax* is - by contrast - I II IV III, the opisthosomal colour marking is less conspicuous and interspersed by black marginal serrations. The colour markings on the carapace differ and the epigynum has two large depressions and small genital openings which indicate that the two species are not even sister taxa.

Indeed, *A. mendax* is likely the sister-species of *A. sydneyensis* Heimer 1986 rather than *A. audax* (Harms & Harvey, in press). Both *A. mendax* and *A. sydneyensis* share an almost identical pedipalp structure with a short conical process in a distobasal position (Fig. 8b, arrow; ''MA'' in Heimer 1986, fig. 28) and a large hook-shaped distomedial sclerite (''DMS'', Figs. 8a–b). Both species have two prominent spines on the male pedipalpal patella only whereas most other species of the genus posess three. *Australomimetus mendax* differs from *A. sydneyensis* in a number of genital features, most noticeably the shape of the tegular sperm duct which is slightly curved in *A. mendax* and strongly curved in *A. sydneyensis* (compare Fig. 8a with Heimer 1986, fig. 28 ''T''). The conical distobasal process in *A. sydneyensis* inflects prolaterally, but is rather straight in *A. mendax*. The shape of the medioectal sclerite (MES) also differs. The epigynum of *A. sydneyensis* has a distal triangular velum and does not possess the two depressions (Heimer 1986, figs. 30–31). *Australomimetus sydneyensis* cannot be distinguished with confidence from *A. mendax* using somatic colour patterns alone.

Distribution.—This species has been collected all over Tasmania and is the only species which is apparently endemic to the island (Fig. 10). Since its sister-species is found in New South Wales a wider distribution range, at least for the common ancestor, must be presumed. The biology of *A. mendax* remains unknown. The species seems to be relatively common and was sampled from eucalypt and pine-wood forests around Launceston. It was also collected in the mountains which may indicate a preference for temperate, timbered habitats.

Australomimetus tasmaniensis (Hickman) new combination
(Figs. 11a–c, 12a–d, 13)

Ero tasmaniensis Hickman 1929:114–116, figs. 8A–D; Heimer 1986:135–136, figs. 48–50; Roewer 1942:1019; Bonnet 1956:1799; Platnick 1989:171.

Material examined.—*Type:* AUSTRALIA: *Tasmania*: holotype ♂, Launceston (41°27′S, 147°10′E), 11 April 1905, V.V. Hickman (QVM 13:7359; Old type No. 39), examined.

Other material examined.—AUSTRALIA: *Tasmania*: 1 ♀, Frenchman's Cap track (42°05′S, 145°56′E), 24 December 1997, L.J. Boutin (QVM 13: 44554); 1 ♂, 1 juvenile, Scott's Peak, Road stop (Site T: 007) (42°59′27.1″S, 146°22′15.6″E), 18 January 2002, L.J. Boutin (QVM 13: 44551); 1 ♀, Picton Valley (site WR9) (43°13′S, 146°40′E), 3 December 1994, K. Michaels (QVM 13: 44558); 1 ♂, Picton Valley (Site Tomalah Creek, WR9) (43°13′S, 146°41′E), 15 July 1994, K. Michaels (QVM 13: 44557); 1 ♂, WARRA Forestry, site near Geeveston at Manuka Road (43°07′S, 146°67′E), 25 February 2004, R. Bashford (QVM 13: 44532); 1 ♀, Lake St Clair, Pump House Point PF 08 (42°07′S, 146°10′E), 11 March 1995, T. Kingston et al. (QVM 13: 23812); 3 ♀, Old Cham Dam Area (41°06′S, 148°05′E), 22 June 1995, M. McCornick (QVM 13: 44548); 1 ♀, Blue Tier Site (BTWHSB2) (41°19′43″S, 148°07′81″E), i.2001, M. MacDonald (QVM 13: 44555); 1 ♀, Blue Tier Site (BTWHSB2) (41°19′43″S, 148°07′81″E), i.2001, M. MacDonald (QVM 13: 44555); 1 ♀, Pipers River (41°05′S, 147°04′E), 6 July 1993, T. Kingston et al. (QVM 13: 42165); 1 ♂, WARRA Forestry, Site near Geeveston No. 282 (43°07′S, 146°65′E), 22 April 1998, D. Bashford (QVM 13: 44537); 1 ♀, 1 ♂, Picton Valley (Site WR93A) (43°13′S, 146°41′E), 16 April 1994, K. Michaels (QVM 13: 44556); 1 ♂, WARRA Forest near Geeveston (Site: 282) (43°10′S, 146°54′E), 22 April 1998, D. Bashford (QVM 13: 44537); 1 ♀, WARRA Forest near Geeveston (Site: 06) (43°10′S, 146°54′E), 16 March 2000, D.

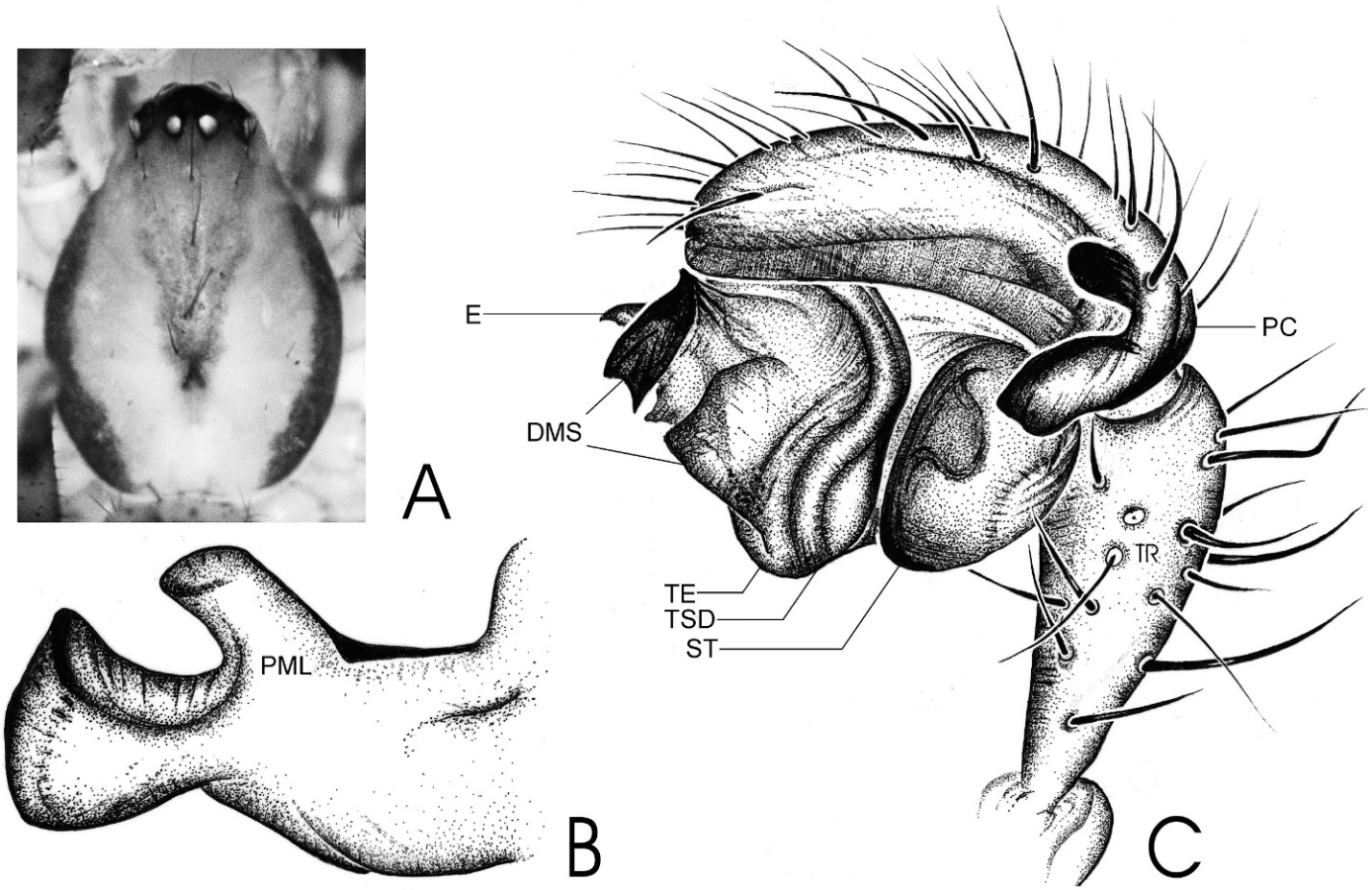

Figure 11.—*Australomimetus tasmaniensis*. A. Carapace, female, frontal view; B. Paracymbium, inner frontal view (Note the paracymbial medial lobe (PML) is almost hemi-quadratic.); C. Pedipalp, male, retrolateral view (Note the absence of a medioectal sclerite (MES) on the tegulum.).

Bashford (QVM 13: 44534); 1 ♀, WARRA Forest (43°10′S, 146°54′E), December 1997, D. Bashford (QVM 13: 44536); 1 ♀, WARRA Forest (43°10′S, 146°54′E), 14 January 1998, D. Bashford (QVM 13: 44541); 1 ♀, Old Cham Dam Area (41°06′S, 148°05′E), December 2000, M. McCornick (QVM 13: 44549); 1 ♀, Old Cham Dam Area (41°06′S, 148°05′E), December 2000, M. McCornick (QVM: 13: 44549); 1 ♀, WARRA Forest (43°10′S, 146°54′E), 11 August 2000, D. Bashford (QVM 13: 44530); 1 ♂, WARRA Forest near Geeveston (43°10′S, 146°54′E), 2 August 2000, D. Bashford (QVM 13: 44539); 1 ♂, WARRA Forest (Site 518) (43°10′S, 146°54′E), 25 July 2000, D. Bashford (QVM 13: 44535); 1 ♂, 5 km ENE. of McPartlan Pass, 22 January 2002, D. Driscoll (QVM: 13:44553); 1 ♂, WARRA Forest (43°10′S, 146°54′E), 12 May 2000, D. Bashford (QVM 13: 44538); 1 ♀, WARRA forest (Site: 70) (43°10′S, 146°54′E), 12 February 1998 (QVM 13: 44531); 1 ♂, WARRA forest (Site: 226) (43°10′S, 146°54′E), 14 January 1998, D. Bashford (QM 13: 44540).

Etymology.—The specific epithet refers to the location of the type series, the island of Tasmania.

Diagnosis.—Small species (carapace length 1.0–1.6 mm) distinguished from other congeners by the combination of the following somatic characters: robust appearance and relatively short legs, unsual leg formula of I IV II III, presence of pronounced broad leg rings, carapace framed by a broad, darkened lateral line and ovoid rather than pyriform (Fig. 11a), clypeus higher than diameter of AME tubercle. Males further distinguished from other species by the presence of a single spine on the pedipalpal patella as well as the presence of only three trichobothria on the pedipalpal tibia (Fig. 11c).

Description.—This species was described by Hickman (1929) and redescribed by Heimer (1986) and Harms & Harvey (in press). We provide new genital drawings for the Tasmanian population since the original drawings by Hickman (1929) and Heimer (1986) are poor. The female genitalia are presented in their known variations.

Variation.—Specimens from Tasmania are dusky in coloration and the opisthosoma can be almost completely dark. The epigynum of Tasmanian species is relatively broad and the basal plate hemiquadratic and seldom tipped (Fig. 12a). The receptacula frequently possess a huge basal lobe and the receptaculum looks somewhat tripartite (Fig. 12c).

Affinities.—Based on striking similarities in the male pedipalpal structure such as the presence of a distomedial sclerite (DMS; Fig. 11c) but also in the female genitalia, this species clearly belongs to *Australomimetus* rather than *Ero*. Also, lines of short conical spines on femora I and II – hypothesized to be autapomorphic for the derived Mimetinae excluding *Ero* (Harms & Harvey, in prep.) – are clearly present

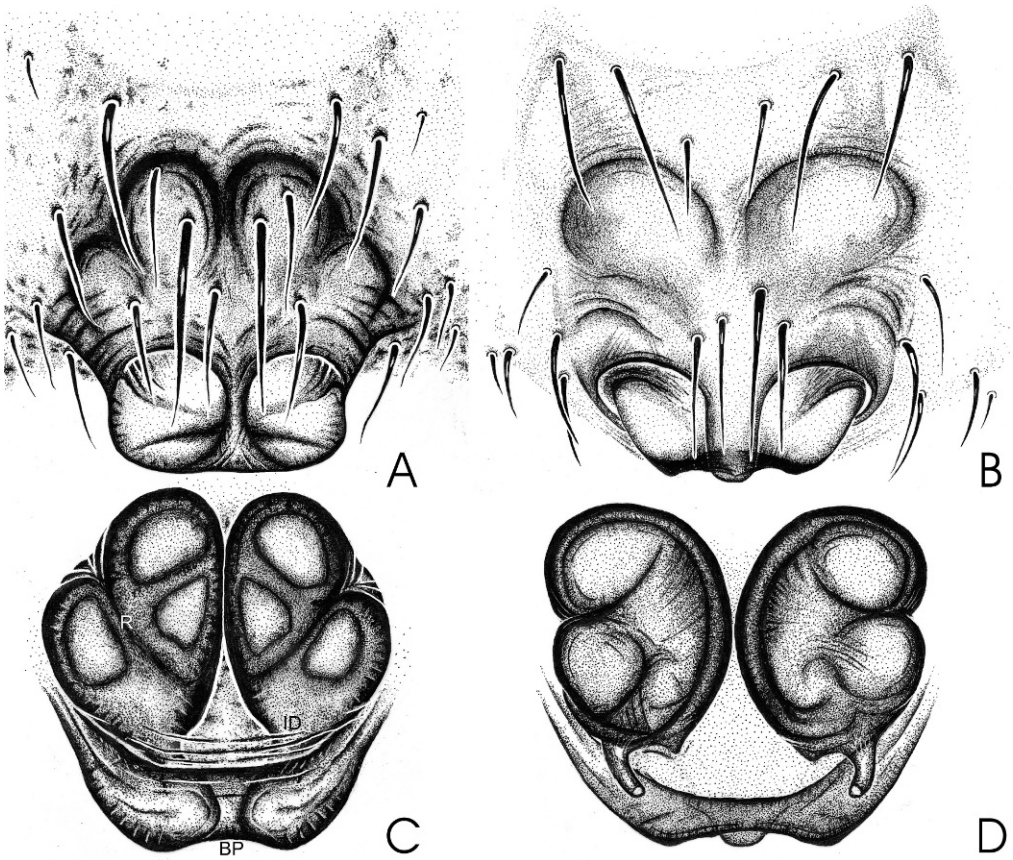

Figure 12.—*Australomimetus tasmaniensis*, female. A. Epigynum, variation 1 from Tasmania; B. Epigynum, variation 2 from Western Australia; C. Receptacula, variation 1 from Tasmania, view slightly posterior; D. Receptacula, variation 2 from Western Australia.

(see also Hickman 1929). An undescribed sister-species from Western Australia which is clearly a member of *Australomimetus* will be described in an upcoming paper that addresses the pirate spiders from Western Australia (Harms & Harvey, in press). The affinities, however, of these two species within the genus remain somewhat enigmatic and some unusual morphological features, such as the high clypeus, leg formula of I IV II III and robust appearance due to its relatively short legs, might be related to its preference for cursorial habitats.

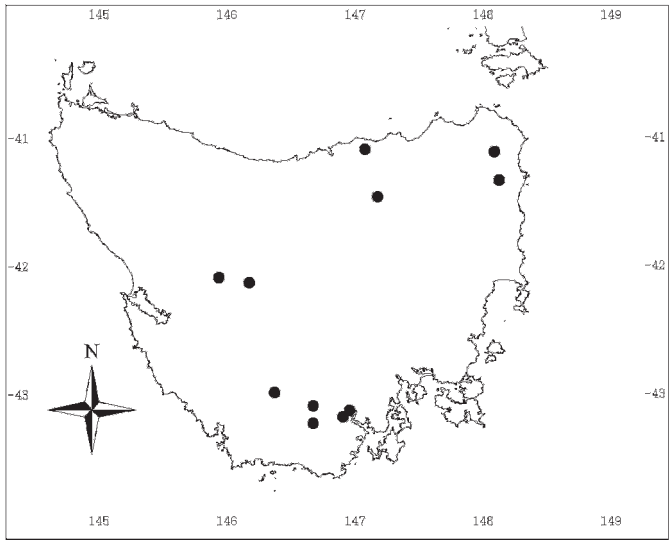

Figure 13.—Tasmanian records for *Australomimetus tasmaniensis*.

Distribution.—This species is widely distributed over much of Tasmania through to tropical Queensland, Western Australia and the Northern Territory. It was also found in New South Wales (Heimer 1986). The map shown here (Fig. 13) considers Tasmanian records only.

DISCUSSION

Interrelationships of Tasmanian Mimetidae.—Although a cladistic analysis is required to delimit monophyletic species-groups within the genus *Australomimetus*, our findings imply that the Tasmanian species are not monophyletic as revealed by peculiar and multiple genitalic and somatic disparities. *Australomimetus aurioculatus* probably belongs to a monophyletic group of rather small species in which the distomedial sclerite (DMS) of the male pedipalp is simple and the medioectal sclerite (MES) mostly absent. The opisthosomal cuticle is often adorned with reddish or orange colour spots and the setation of the opisthosomal integument is rather weak. The majority of species with a similar somatic and genitalic appearance are found in tropical Queensland, although two species are also known from Western Australia (Harms & Harvey, in press). *Australomimetus tasmaniensis* – although of similar size – does not belong to this group and a similar species from Western Australia will be described

elsewhere. *Australomimetus mendax* and *A. audax* both belong to a third group of rather robust species which share a conspicuous whitish folium on the dorsal opisthosomal cuticle (Fig. 1d), strong rows of conical spinules on femora I and II, and - in most species - a javelined scape on the female epigynum (e.g. Heimer 1986, figs. 13, 14, 30). A detailed study of material deposited in the Queensland Museum reveals that most of these species are distributed in tropical Queensland and that the presumed species-group is subject to ongoing allopatric speciation and radiation. Due to the striking interspecific similarities but intraspecific variability in genital morphology this group may present a significant taxonomic challenge.

Biogeography.—Four of the five Tasmanian species are also distributed on the Australian mainland (Harms & Harvey, in press), suggesting that the Bass Strait does not effectively prevent trans-oceanic dispersal in both directions or, alternatively, that the geological isolation of Tasmania which has lasted for 12,000 to 13,000 years (Sanmartin & Ronquist 2004; Brown & Lomolino 1998) was not sufficient to allow the formation of new species. Neither possibility can be definitively ruled out, but from the extremely wide distribution ranges of some species – extending from the east to the west coast of the Australian mainland – it would appear that at least the occurrences of *A. aurioculatus* and *A. tasmaniensis* in Tasmania are a secluded relic of a previously cohesive distribution that extended from northern Queensland to southern Western Australia. The Tasmanian populations might have become isolated when Bass and Banks Strait opened, leading to the formation of Tasmania as an island, and morphological differentiation of the Tasmanian populations.

The collection records of *A. mendax* and *A. sydneyensis* are interesting in this matter. Of all five Tasmanian mimetid species, only *A. mendax* is currently endemic to Tasmania with its putative sister-species *A. sydneyensis* from New South Wales found about 900 km apart. The close morphological similarities between both species suggest a common ancestor for both species and rather recent allopatric speciation events. It would be of interest to test the affinities of both species on a genetic level, using a molecular clock in order to estimate the the time that the two species diverged and the possible divergence date.

Variation.—All species described and illustrated throughout this paper normally exhibit a certain amount of variability in the structures of the male and female genitalia. Specimens of a single species usually differ slightly from one another in the shape and sclerotization of the epigyne, length of the male pediapaplpal tibia, shape of the paracymbium, DMS and MES but also in the colouration markings of the opisthosomal cuticle. These variations are normal and some drawings on variability are given above. Beside these individual variations, we also found some general modifications which interestingly appear to be relatively stable amongst the Tasmanian populations of a single species and set them apart from their counterparts from the Australian mainland. Tasmanian specimens often differ from mainland Australian specimens in terms of body size, cuticle sclerotization and shape of the genitalia. Female Tasmanian specimens often have more strongly sclerotized receptacula and broader epigyna when compared to specimens of the same species from the Australian mainland (e.g. compare Figs 12a–b or 12c–d). The body cuticle of both sexes is often heavily sclerotized, giving the species a darker appearance in general. Specimens of *A. maculosus* and *A. tasmaniensis* are also significantly larger than their counterparts from Queensland or New South Wales. Adult specimens of *A. maculosus* were found to be about double the size of specimens collected in tropical Queensland. This might all be due to longer generation cycles and slower body growth due to lower average temperatures in temperate Tasmania compared to subtropical or tropical mainland Australia; something which also holds true for the New Zealand species.

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